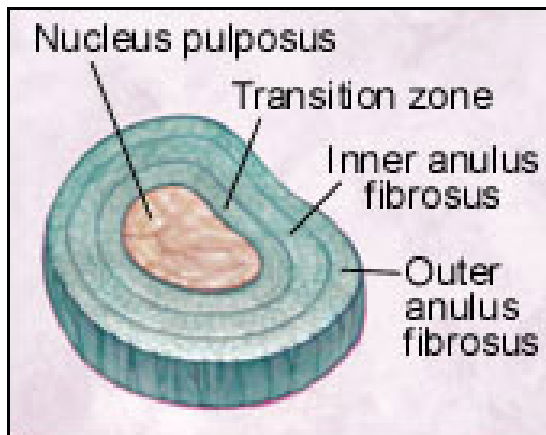


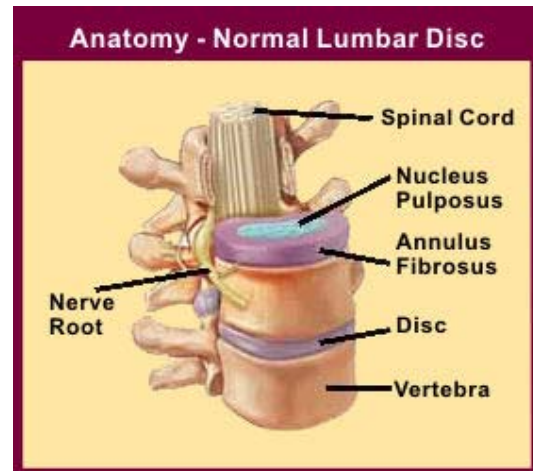
Spinal Disk

WHAT IS THE SPINAL DISC?

The spinal disc is the structure located between each vertebral body of the spine. It acts as fibrous joint working together with spinal facet joints. The disc also acts as a cushion between the bones of the spine, the vertebrae. It is comprised of two types of material. The inner layer is a gelatinous material known as the "nucleus pulposus". The outer layer, or layers, are made up of a fibrous material and known as the annulus fibrosus. As we age, the disc becomes more rigid and loses hydration. In a young individual, the disc is soft and elastic, but like so many other structures in the body, the disc gradually loses its elasticity and is more vulnerable to injury. In fact, even in individuals as young as 30, MRIs show evidence of disc deterioration in about 30% of people.



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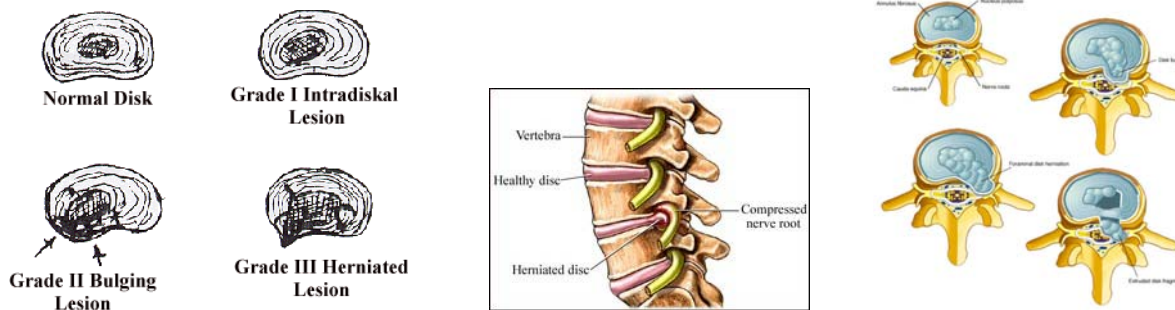
WHAT CAUSES THE SYMPTOMS?

When the disc tears or ruptures and pushes out, the nerves may become irritated and pinched. A bulging or herniated disc may occur suddenly in an event such as a fall or an accident, or may occur gradually with repetitive straining of the spine. Common symptoms of injury to the cervical spinal disc include any or all of the following: pain to the neck, upper back, interscapular region, arms and hands, as well as numbness, tingling and weakness. Often times patients may have severe pain which restricts movement in one or multiple directions. Common symptoms of injury to the lumbar disc include one or many of the following: pain to the low back, buttock region, leg or foot, as well as numbness, tingling and weakness.

PRINCIPAL DIAGNOSIS:

DISC PROTRUSION/BULGE: Examination and patient symptom report reveals manifestations of disc injury. A 'disc bulge' or 'protrusion' is a word commonly used to describe a slight outpouching of the disc. The words 'disc bulge' imply that the disc appears symmetric with a small amount of outpouching, and no significant herniation.

DISC EXTRUSION/HERNIATION: Examination and patient symptom report reveals manifestations of disc injury. A 'disc extrusion' or 'herniation' is a word commonly used to describe a more significant outpouching of the disc. The words 'disc extrusion' or 'herniation' imply that the disc appears asymmetric with a very significant amount of outpouching of disc material. As the spinal disc becomes less elastic, it can rupture. When the disc ruptures, a portion of the spinal disc pushes outside its normal boundary. In this case the disc can push out against the spinal cord and/or spinal nerves, either directly by the disc itself or by the localized inflammation. There is normally a little extra space around the spinal cord and spinal nerves, but if enough of the herniated disc is pushed out of place, then these structures may be compressed.



SECONDARY DIAGNOSIS:

MYALGIA & MUSCULAR TIGHTNESS: Pain in a muscle; or pain in multiple muscles. Myalgia means muscle pain. Myalgia can be temporary or chronic depending upon the length of time a patient has had disc irritation. It is very common to experience muscular tightness and guarding as the body reacts to the disc irritation. This muscular tightness is a normal reactive tightness and splinting to help protect and guard against further injury. Patients have a higher susceptibility to muscular strain during times of increased disc irritation.

RED FLAGS: Red flags are considered symptoms such as 1) increased pain, 2) increased or new numbness, tingling or weakness, 3) changes in bowel or bladder function (uncontrolled release of bladder or release of bowels/ no bowel movement). Please call the physician if any of these symptoms occur.

TREATMENT: Treatment varies per patient and per injury. In some cases the patient may be treated with gentle spinal adjusting, traction and rehabilitative stretching and exercises to help the disc heal correctly. Treatment time may be longer than other injuries due to the fact the annulus fibrosus tissue of the disc has a very low blood supply. Reduction in pain alone does not mean that the patient has fully healed, reevaluation and examination by the physician is important in ensuring full recovery. Stages of treatment and healing include the following 3 phases:

- **Acute Phase:** This is the initial phase following the injury. During this phase symptoms may include severe pain, inflammation, swelling, decreased range motion and possibly a decrease in neurological function such as numbness, tingling or weakness. During the end of this phase scar tissue begins to grow. This phase can last anywhere from 2-6 weeks.
- **Stabilization Phase:** This stage is marked by new growth of connective tissue and capillaries, to help repair damaged structures. Scar tissue continues to grow during this time. Tissues in this stage are very fragile, so placing stress on the injured area should be limited to the treating physician. Gentle movement and possibly mild isometric and low intensity, non weight bearing exercises may be advised. This phase can last anywhere from 6-8 weeks.
- **Rehabilitation Phase:** During this phase of healing, scar tissue is remodeled by the stresses placed on it. This means that the activities and exercises will affect the strength and fiber orientation of the developing scar tissue. During this stage, continued care and home exercise programs are crucial for proper healing. Such care will help to properly develop the scar tissue to where it can be useful in protecting and stabilizing the injured area. If treatment or home exercises are discontinued at this phase, the injured area will heal in a contracted and disorganized state and the patient will become more susceptible to re-injury in the future. This phase can last anywhere from 4-6 weeks.

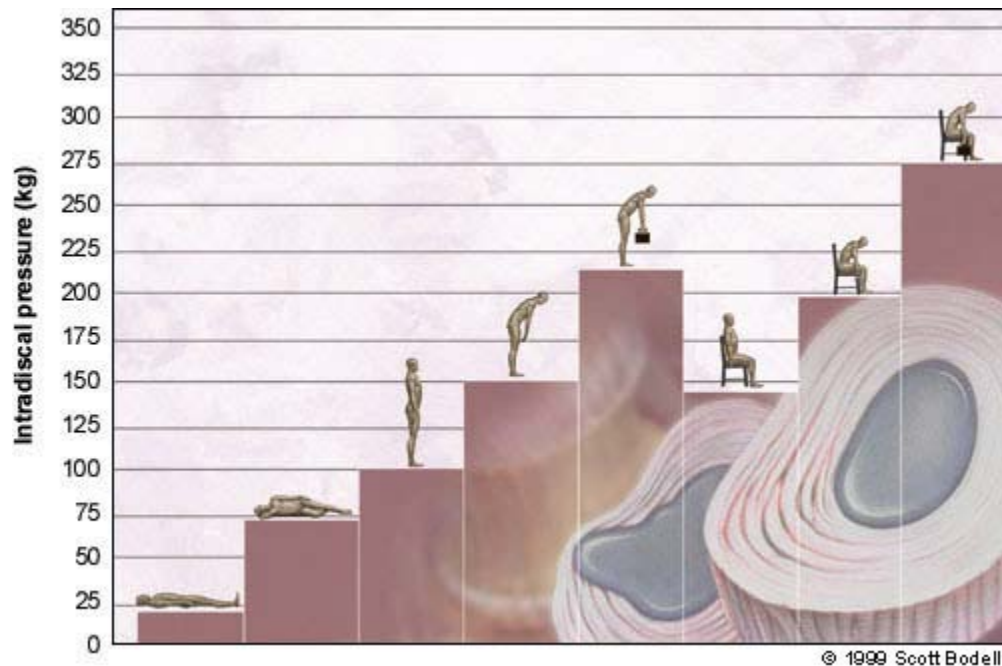
Each phase of treatment and healing can vary in time depending upon severity of injury, types of treatment, patient compliance and symptom flare-ups

TREATMENT PLAN/ APPOINTMENTS: Treatment plans vary per patient and per spinal injury as each patient and injury is different. Initially, patients are treated more frequently as our goal is to increase healing and decrease pain. As the disc begins to heal and scab internally, treatment frequency is reduced and home stretching and exercises are increased. Our goal is to help the patient to further manage their condition as the disc continues to heal and stabilize. Possible treatment may include:

- **Manual therapy** - Manual therapy such as gentle spinal adjustments and spinal traction increase circulation, reduce pain, reduce inflammation, and increase pain-free movements.

- **Activity modification** — This might include altering your home and workplace environments to avoid excessive twisting, stretching, and bending. Using proper lifting techniques also is important for protecting the spine.
- **Medications** — Medication can help relieve pain, and reduce inflammation and muscle spasms. An over-the-counter non-steroidal anti-inflammatory drug (NSAID), such as Motrin or Ibuprofen, might be recommended to help reduce pain and swelling. Stronger medications might be prescribed if the NSAIDs do not provide relief. These medications might include pain relievers and muscle relaxants. These medications can have side effects, including nausea, headaches, and sleepiness.
- **Exercise therapy** — The goal of exercise and/or physical therapy is to reduce pain and inflammation through movement, and increase pain-free movement. Exercise also increases circulation, which aids healing and improves flexibility.
- **Posture correction** — Keeping pressure and irritation off of the spine can reduce stress on the spinal joint and increase heal time.

SPECIAL INSTRUCTIONS: The doctor may send you out for further imaging of the spine and/or disc and in some cases he may refer you out for evaluation by a neurologist/neurosurgeon.



Relative increases and decreases in intradiscal pressure in relation to different body positions. Note that seated and bending postures apply more pressure to the disc than do standing and recumbent positions. This explains the exacerbation of symptoms of herniated disc when patients are in the former positions.